UNIVERSITI MALAYSIA SARAWAK • UNIMAS •

Faculty of Economics and Business

MONEY DEMAND AND FINANCIAL LIBERALIZATION: REVISITING DIVISIA MONEY IN MALAYSIA

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Bachelor of Economics with Honours
(International Economics)
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MONEY DEMAND AND FINANCIAL LIBERALIZATION: REVISITING DIVISIA MONEY IN MALAYSIA

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This project is submitted in partial fulfillment of
the requirements for the degree of Bachelor of Economics with Honours
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Statement of Originality

The work described in this Final Year Project, entitled
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is to the best of the author's knowledge that of the author except where due reference is made.

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Date

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ABSTRACT

MONEY DEMAND AND FINANCIAL LIBERALIZATION: REVISITING DIVISIA MONEY IN MALAYSIA

By

Lee Wen Wen

Financial liberalization and innovation that have emerged in Malaysia since the late 1970s has been alleged to cause the breakdown in the previously stable money demand function, which in line has impeded the usefulness of monetary targeting based on simple-sum aggregation method. Barnett (1980) proposed Divisia monetary aggregation as to contrast with the conventional simple-sum aggregation. Covering the period of 1981:Q1 to 2004:Q4, we reexamine the effects of financial liberalization and innovation on money demand functions, using the conventional simple-sum and Divisia monetary aggregates (of M1 and M2). Also, we test the relative performances these aggregates and investigate the relationship between money demand with income, interest rate and exchange rate. By applying cointegration, error-correction model and Granger-causality tests, results indicated that Divisia M2 has the best properties among all of the aggregates. Given its superiority theoretically and empirically, we strongly advocate the use of Divisia monetary aggregates in the course of monetary targeting, and subsequently, in the conduct of monetary policy.

ABSTRAK

PERMINTAAN WANG DAN LIBERALISASI KEWANGAN:

IMBASAN KEWANGAN DIVISIA DI MALAYSIA

Oleh

Lee Wen Wen

Liberalisasi dan inovasi kewangan yang berlaku di Malaysia sejak lewat 1970an telah dianggap sebagai penyebab utama kemerosotan fungsi permintaan wang yang stabil sebelum ini, dan juga telah mengurangkan kegunaan pensasaran monetari yang berdasarkan kaedah pengagregatan monetari mudah. Barnett (1980) telah mencadangkan pengagregatan monetari Divisia sebagai kontrast dengan pengagregatan monetari mudah. Untuk tempoh 1981:Q1 hingga 2004:Q4, kami mengenalpasti kesan liberalisasi dan inovasi kewangan ke atas fungsi permintaan wang, dengan menggunakan agregat monetari mudah dan Divisia (M1 dan M2). Juga, kami membandingkan agregat tersebut secara relatifnya dan mengkaji hubungan antara permintaan wang dengan pendapatan, kadar bunga dan kadar pertukaran wang. Dengan mengaplikasikan kaedah kopengamiran, model pembetulan-ralat serta ujian penyebab Granger, keputusan analisis menunjukkan bahawa Divisia M2 mempunyai ciri-ciri yang terbaik antara semua agregat. Dengan kelebihan dari segi teori dan empirikal, kami menyarankan penggunaan agregat monetari Divisia dalam pensasaran monetari, dan seterusnya, dalam konduksi polisi monetari.

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To my dearest family members, thank you for being loving and supportive all this while, and for never being too far away from me. I am forever beholden for the love and patience showered on me.

To my beloved mates, I cannot thank you enough for the care and encouragement given to me throughout the good and bad times. It was because of you guys, I know that I was never by myself.

Last but not least, I would like to thank the lecturers and staffs from the Faculty of Economics and Business, who have always kind and helpful in every aspect. I am and will always be indebted to those who had lent me a helping hand. I can never overemphasize my appreciation. Thank you for making me realize that I should never be paranoid of the truth.

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REFERENCES

Ang, J. B. and McKibbin W. J. (2005). *Financial Liberalization, Financial Sector Development and Growth: Evidence from Malaysia*. The Australian National University, Centre for Applied Macroeconomic Analysis, CAMA Working Paper Series 5/2005.

Ansari, M. I. (2002). Impact of Financial Development, Money, and Public Spending on Malaysian National Income: An Econometric Study. *Journal of Asian Economics*, *13*: 72-93.

Azali, M. (2003). *Transmission Mechanism in a Developing Economy: Does Money or Credit Matter?* Malaysia: Universiti Putra Malaysia Press.

Azali, M. and Matthews, K. (2001). Broad Money Demand and Financial Liberalization in Malaysia: An Application of the Nonlinear Learning Function and Error-Correction Models. *Pertanika Journal of Social Science and Humanities*, *9*(2): 131-141.

Bank Negara Malaysia. (1999). *The Central Bank and the Financial System in Malaysia – A Decade of Change*. Kuala Lumpur: Bank Negara Malaysia.

Barnett, W. A. (1980). Economic Monetary Aggregates: An Application of Index Number and Aggregation Theory. *Journal of Econometrics*, *14*(1): 11-48.

Barnett, W. A. and Kwag, C. H. (2005). *Exchange Rate Determination from Monetary Fundamentals: An Aggregation Theoretic Approach*. University of Kansas, Department of Economics, Working Paper Series in Theoretical and Applied Economics, No. 200513.

Batten, D. S. and Thornton D. L. (1985). Are Weighted Monetary Aggregates Better Than Simple-Sum M1? *Federal Reserve Bank of St. Louis Review, June/July*, *67*(6): 29-40.

Bekaert, G. and Harvey, C. R. (2004). *A Chronology of Important Financial, Economic and Political Events in Emerging Markets*. [On-line]. Available: http://www.duke.edu/~charvey/Country_risk/chronology/chronology_index.htm

Dahalan, J., Sharma, S. C. and Sylwester, K. (2005). Divisia Monetary Aggregates and Money Demand for Malaysia. *Journal of Asian Economics*, *15*: 1137-1153.

Darrat, A. F., Chopin, M. C. and Lobo, B. J. (2005). Money and Macroeconomic Performance: Revisiting Divisia Money. *Review of Financial Economics*, *14*: 93-101.

Dekle, R. and Pradhan M. (1997). *Financial Liberalization and Money Demand in ASEAN Countries: Implications for Monetary Policy*. International Monetary Fund Working Paper, WP/97/36.

Dickey, D. A. and Fuller, W. F. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association*, *74*: 427-431.

Dickey, D. A. and Fuller, W. F. (1981). The Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, *49*(4): 1057-1072.

Diewert, W. (1976). Exact and Superlative Index Numbers. *Journal of Econometrics, 4*: 115-145.

Drake, L., Mullineux, A. and Agung, J. (1997). One Divisia Money for Europe? *Applied Economics*. *29*(6): 775-786.

Elger, T., Jones, B. E. and Nilsson, B. (2006). Forecasting with Monetary Aggregates: Recent Evidence for the United States. *Journal of Economics and Business*, *October/November*, *58*(5-6): 428-446.

Engle, R. F. and Granger, C. W. J. (1987). Cointegration and Error Correction: Representation, Estimation and Testing. *Econometrica*, *55*(2): 987-1008.

Fair, R. C. (1987). International Evidence on the Demand for Money. *The Review of Economics and Statistics*, *63*: 473-480.

Farr, H. T. and Johnson, D. (1985). *Revisions in the Monetary Services (Divisia) Indexes of Monetary Aggregates*. Mimeographed. Board of Governors of the Federal Reserve System, Washington, D. C.

Fisher, D., Fleissig, A. R. and Serletis, A. (1998). Monetary Aggregation, Rational Expectations, and the Demand for Money in the United States. *North American Journal of Economics & Finance*, *9*(1): 1-13.

Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross Spectral Methods. *Econometrica*, *37*: 424-438.

Granger, C. W. J. (1981). Some Properties of Time Series Data and Their Use in Econometric Model Specification. *Journal of Econometrics*, *16*: 121-130.

Gujarati, D.N. (1995). *Basic Econometrics (3rd Edition)*. Singapore: McGraw-Hill.

Habibullah, M. S. (1998). Divisia Money and Income in Indonesia: Some Results from Error-Correction Models, 1981: 1-1994: 4. *Applied Economics Letters*, *5*: 387-391.

Habibullah, M. S. (1999). *Divisia Monetary Aggregates and Economic Activities in Asian Developing Economies.* Aldershot: Ashgate Publishing Ltd.

Halicioglu, F. and Ugur, M. (2005). On Stability of the Demand for Money in a Developing OECD Country: The Case of Turkey. *Global Business and Economic Review*, *7*(3), *September*.

Hendry, D. F. (1979). Predictive Failure and Econometric Modeling in Macroeconomics: The Transaction Demand for Money. In Ormerod, P. (Ed.), *Economic Modeling*. London: Heinemann Education Books.

Hendry, D. F. and Pagan, A. R. and Sargan, J. D. (1984). Dynamic Specifications. In Griliches, Z. and Intriligator, M. D. (Eds.), *Handbook of Econometrics, Vol. 2*. Amsterdam: North-Holland.

Huang, J. C., Lin, C. F. and Cheng, J. (2001). Evidence on Nonlinear Error Correction in Money Demand: The Case of Taiwan. *Applied Economics, 33*: 1727-1736.

Hussain, H. and Liew, V. K. S. (2007). Money Demand Amid Financial Innovation and Liberalization. In S. A. Mansor, C. H. Puah and E. Lau (Eds.), *Contemporary Issues of Money, Exchange Rates and Economic Growth in ASEAN*. Kuching: UNIMAS Press (*forthcoming*).

International Monetary Fund. *International Financial Statistics*, various issues, Washington D.C.: IMF.

Johansen, S. (1988). Statistical Analysis of Cointegration Vectors. *Journal of Economic Dynamic and Control*, *12*: 231-254.

Johansen, S. and Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration – with Application to the Demand for Money. *Oxford Bulletin of Economics and Statistics*, *52*: 169-210.

Khan, M. S. (2003). *Current Issues in the Design and Conduct of Monetary Policy*. International Monetary Fund Working Paper, WP/03/56.

MacKinnon, J.G. (1996). Numerical Distribution Functions for Unit Root and Cointegration Tests. *Journal of Applied Econometrics, 11*: 601-618.

McKinnon, R. I. (1973). *Money and Capital in Economic Development*. Washington D. C.: Brookings Institution.

Moreno, R., Pasadilla, G. and Remolona, E. (1998). *Asia's Financial Crisis: Lessons and Policy Responses*. Pacific Basin Working Paper Series, No. PB98-02.

Motley, B. (1988). Should M2 Be Redefined? *Federal Reserve Bank of San Francisco, Review, Winter*: 33-51.

Nwaobi, G. C. (2002). A Vector Error Correction and Nonnested Modeling of Money Demand Function in Nigeria. *Economics Bulletin, 3*: 1-8

Pan, H. and Deng, S. (1997). The Demand for Money in China. [On-line]. Available: http://site.uibe.edu.cn/JMTMSUI/UploadFiles/Files/phy.pdf.

Pan, M., Fok, R. C. and Liu, Y. A. (2007). Dynamic Linkages Between Exchange Rates and Stock Prices: Evidence from East Asian Markets. *International Review of Economics and Finance* (*forthcoming*).

Phillips, P. C. B. and Perron, P. (1988). Testing for a Unit Root in Time Series Regression. *Biometrika*, *75*(2): 335-346.

Poole, W. (1991). *Statement before the Subcommittee on Domestic Monetary Policy of the Committee on Banking, Finance and Urban Affairs*, U.S. House of Representatives, November 6, 1991. Government Printing Office, Serial No. 102-82.

Puah, C. H., Habibullah, M. S., Lau, E. and Mansor, S. A. (2006). Testing Long-run Monetary Neutrality in Malaysia: Revisiting Divisia Money. *Journal of International Business and Economics*, *6*(1): 110-115.

Rotemberg, J. J., Driscoll, J. C. and Poterba, J. M. (1995). Money, Output and Prices: Evidence from a New Monetary Aggregate. *Journal of Business and Economic Statistics*, *13*(1): 67-83.

Schunk, D. L. (2001). The Relative Forecasting Performance of the Divisia and Simple Sum Monetary Aggregates. *Journal of Money, Credit and Banking*, *33*(2): 272-383.

Serletis, A. (1987). On the Demand for Money in the United States. *Empec*, *12*: 249-255.

Serletis, A. and Molik, T. E. (1999). *Monetary Aggregates and Monetary Policy*. Money, Monetary Policy and Transmission Mechanisms: 103-135. Canada: Bank of Canada.

Shaw, E. S. (1973). *Financial Deepening in Economic Development*. New York: Oxford University Press.

Spindt, P. A. (1985). Money is What Money Does: Monetary Aggregation and the Equation of Exchange. *Journal of Political Economy*, *93*: 175-204.

Sriram, S. S. (1999). *Demand for M2 in an Emerging-Market Economy: An Error-Correction Model for Malaysia*. International Monetary Fund Working Paper, WP/99/173.

Teles, P. and Zhou, R. (2005). A Stable Money Demand: Looking for the Right Monetary Aggregate. *Econometric Perspectives*, *Quarter 1*: 50-63.

Thornton, D. L. and Yue, P. (1992). An Extended Series of Divisia Monetary Aggregates. *Federal Reserve Bank of St. Louis Review*, *November/December*, *74*(6): 35-52.

Tseng, W. and Corker, R. (1993). *Monetary Policy in the SEACEN Countries: An Update*. Part One: SEACEN Study on Monetary Policy and Financial Reform.

Kuala Lumpur: The South East Asian Central Banks (SEACEN) Research and Training Centre.

Wesche, K. (1996). *Aggregating Money Demand in Europe with a Divisia index*. University of Bonn, Discussion Paper No. B-393, SFB 303.

Yol, M. A. (2004). *Stability of Money Demand Function under the Southeast Asian Financial Crisis: Evidence from Malaysia*. Paper presented at the Asia Pacific Economics and Business Conference 2004, Penang, Malaysia.

Yu, Q. and Tsui, A. K. (2000). Monetary Services and Money Demand in China. *China Economic Review*, *11*: 134-148.

Yue, P. and Fluri, R. (1991). Divisia Monetary Services Indexes for Switzerland: Are They Useful for Monetary Targeting? *Federal Reserve Bank of St. Louis Review*, *September/October*, *73*: 19-33.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The Asian countries faced difficult challenges in macroeconomic management in the 1980s as the global economic environment deteriorated markedly. During that period, practically all of the Asian countries went through liberalization of domestic financial systems, which brought about significant changes in the both of their economic and financial environments. Such condition called for a redirection of policies to sustain both non-inflationary growth and balance of payments viability.

In the standpoint of McKinnon (1973) and Shaw (1973), a well-functioning financial system would lead to economic growth. In other words, if a country's financial system is bounded by heavy government restrictions such as interest rate ceilings, direct credit programs and high reserve requirements, financial deepening might in fact be impeded. This would in turn jeopardize the quality and quantity of investments available in the economy, bringing negative impacts to economic growth. A well-functioning financial system is therefore crucial for any given country, for it is capable to mobilize household savings, allocate resources efficiently, diversify risks, induce liquidity, reduce information and transaction costs and provide an alternative to raising funds through individual savings and retained earnings (Ang and McKibbin, 2005, pp. 8).

Prior to financial reforms, financial systems in many of the Asian countries shared alike characteristics. They were depicted by restrictive financial measures, for instance, controls on interest rates and credit allocation, explicit and implicit taxes on financial institutions, government ownership of financial institutions, segmentations and international capital controls (Habibullah, 1999). Monetary policy was conducted in an environment where the financial markets were underdeveloped, alongside with limited international capital mobility and fixed exchange rate regimes (Tseng and Corker, 1993).

Financial liberalization and innovations came in sight as the stimulant of revolution in the financial systems, causing changes of different extents. Among many of its impacts, the utmost important would be the alterations of money demand relationship, which in line brought down the effectiveness monetary policy. Thus, there existed a need to reevaluate the appropriate instruments of monetary policy.

In a general manner, financial liberalization and monetary policy reforms not only contributed to a more efficient financial system, they have also enhanced the effectiveness and flexibility of monetary policy.

1.1 Background of the Study

Achieving independence in 1957, Malaysia became a paradigm in the world's eyes when it showed itself of being capable to achieve remarkable economic success in a relatively short period of time. In five decades, Malaysia has successfully transformed itself from an agricultural based economy to a manufacturing and service based economy, in consequence, changing its status from a previously underdeveloped country to a Newly Industrialized Country (NIC). Malaysia is now a competitive player in both of the regional and global markets, and it is seemingly to grow beyond this point in near future.

Prior to financial liberalization, monetary policy objectives were simply to strengthen and develop the financial infrastructure. Following rapid development in the financial system, the public has now become more susceptible to changes in interest rates and this has altered the preferences and behavior of economic agents in holding money. As a result, acceleration in the rate of financial deregulation and financial innovations decreased the stability of money demand through changes in the spectrum of portfolio holdings (Azali, 2003). Such evolvements eroded the effectiveness of monetary policy, thus called for adaptations to contemporary financial conditions in order to sustain a healthy and positively growing economic environment.

Financial reforms were aimed at enhancing the efficiency of the financial system by boosting the reliance on market forces as well as improving the effectiveness of monetary policy (Sriram, 1999). As a response, there was a liberalizing of interest rates and reduction of direct controls on financial markets, at the same time strengthening the supervisory framework and to promote a deepening of money and capital markets. Liberalization was complemented by the relaxation of capital controls, along with a shift towards more flexible exchange rate arrangements.

From here, we will glance through the economic and financial surroundings of Malaysia before and after financial liberalization took place, through the policy implementation and changes in the financial system itself.

1.1.1 Financial System in Malaysia: Pre-Liberalization Period

All in all, the financial environment of Malaysia before financial liberalization and innovation set foot can be characterized by the following: interest rate restrictions, domestic credit controls, high reserve requirements, segmented financial markets, underdeveloped money and financial markets and last but not least, international capital flow controls. Interest rate restrictions were viewed as a must to be able to provide low cost funding to encourage investments. Therefore, deposit and loan rates ceilings were imposed on commercial banks, while non-bank financial institutions were less restricted. In addition, the market and financial instruments in those days were quite inadequate to sustain indirect means for influencing bank reserves. As an alternative, domestic credit controls, such as credit ceilings and sectoral credit allocation were extensively used, involving fixing ceilings on the level or growth of bank credit and directed credit schemes.

On the other hand, commercial banks were to fulfill the reserve requirements set by the central bank of Malaysia – Bank Negara Malaysia (BNM), whereby interest-free funds were kept with BNM. As such, high reserve requirements have been regarded as an implicit tax, due to the fact that the banks were not paid any interest on the required reserves. Correspondingly, the intention of protecting depositors and instilling confidence in the stability of the financial system, resulted in a high degree of market segmentation. Activities of financial institutions and foreign banks were strictly regulated to only conduct business within their domains, whereas new entrants of financial institutions were generally regulated or even prohibited. Another prominent feature was that both of the money and financial markets were considerably underdeveloped, hence, were unimportant in the intermediation of funds from savers to borrowers. This has proven to be challenging for firms to expand their businesses as they have relatively no choice of raising funds from the market.

High capital mobility implied the ease of foreign funds transference between countries for investments and better returns. Yet for most part, international capital flows were put under heavy regulations, given that the monetary authorities need to shore up fixed exchange rate arrangements and to protect the domestic interest rate and monetary conditions from being affected by those of influences from abroad.

Although different types of regulations were intended to both protect and insulate local financial system from undesired changes or disturbances, it has, nonetheless, placed the financial system into a disadvantageous state. For instance, the lack of developed money and financial markets and instruments thwarted the conduct of monetary policy because it does not allow the use of Open Market Operations (OMOs) and indirect controls on interest rates. Also, there was fairly little competition, since the banking and finance industries were under heavy regulations. This was another obstacle for the further improvement of financial intermediation and developments of new financial products and services.

1.1.2 Financial System in Malaysia: Post-liberalization Period

According to Ansari (2002, pp. 79), in general, financial sector development includes: First, financial deepening, which entails growth of financial instruments. It manifests itself in a rise in the volume of turnover and is commonly measured by the ratio of monetary aggregates to Gross Domestic Product (GDP); second, financial broadening, which implies an increase in the number of financial institutions and financial instruments; and third, financial liberalization, which means deregulation of interest rates, free movement of foreign capital, and removal of other restrictive practices. As time progressed, the previously restricted financial system has been gradually freed up. Few evident features were seen: interest rates were liberalized, credit controls and capital controls reduced, financial system reformed, and the introduction of a more flexible exchange arrangements.

Malaysia chose to relax its controls on interest rates by making more frequent adjustments in rates, providing wider bands for regulated rates, and the removal of some interest rate ceilings. In October 1978, BNM introduced a new interest rate scheme for the commercial banks whereby commercial banks were given the freedom to quote the interest rate payable on deposits and lending rates. Commercial banks also began to introduce their own base lending rate (BLR) in 1981, which was a rate based on their cost of funds. However, starting November 1983, all interest rates on loans and advances have been tied to the base lending rates of the two largest domestic commercial banks, namely, Malayan Banking Berhad and Bank Bumiputra Malaysia Berhad (Habibullah, 1999, pp. 6). In fact, the deposit rates of the banks and finance companies became linked to the deposit rates of the two banks with effect from October 1985. In February 1987, all deposit rates at financial institutions were fully liberalized. Nevertheless, it was not only until February 1991 that interest rates on loans became free from the administrative control of BNM.

Asian countries including Indonesia, Korea, Malaysia, Nepal, the Philippines, Sri Lanka and Thailand have reduced or eliminated their overall direct credit controls on bank lending. Nevertheless, some controls were reestablished in the face of severe monetary disturbances and adverse macroeconomic developments. On the other hand, sectoral credit allocation requirements remained in Malaysia, Myanmar, Nepal, Sri Lanka and Thailand (Tseng and Corker, 1993).

Malaysia had successfully reduced the obstacles of competition and market segmentation faced by allowing greater freedom of entry, expanding the scope of permissible business activities for different types of financial institutions, and at the same time loosens the restrictions on foreign banks activities. Improved management also necessitated new lending policies, better loan recovery procedures, more sophisticated information systems, and better trained staffs. By the beginning of the 1980s, money markets gained its importance in Malaysia. In general, the development of new financial instruments that are subjected to less restriction – central bank and government securities, certificates of deposits, various commercial papers, and repurchase agreements – nurtured a sound environment for the growth of money markets. As a positive outcome, the development of money markets has intensified competitions in the financial system, in addition to give way to the use of OMOs as a flexible means for managing liquidity.

Asian countries of Indonesia, Korea, Nepal, Singapore, and Thailand chose to maintain fixed exchange rate arrangements that were commonly pegged to the US dollar in the late 1970s. Nonetheless, by 1989, the exchange rate arrangements have been more flexible. Malaysia, Myanmar, Nepal and Thailand opted to peg their currencies to composite baskets while Indonesia, Korea, the Philippines, Singapore and Sri Lanka opted for managed floating regimes. As for the controls on international capital flows, those that were not financed by local borrowing were almost unrestricted by early 1980s.

In a nutshell, monetary policy reforms have resulted in the significant development of the banking sector, credit, capital, and money markets. Notwithstanding, the most significant effect of financial liberalization is that it has given the authority an opportunity to exercise accommodative domestic monetary policy. Table 1.1 presents the chronological economic and financial events in Malaysia from the period of 1973 to 2004.

Table 1.1: Chronology of Economic and Financial Events in Malaysia

Year	Major Economic and Financial Events
1973	• The Kuala Lumpur Stock Exchange (KLSE) was founded.
1978	• Interest rates and capital accounts were liberalized.
1979	• Amount of Malaysian banknotes that travelers were allowed to bring into or take out of the country was raised.
	• Restrictions on the export of foreign currencies were lifted.
1980	• Fixed exchange rate was abandoned, and a controlled Effective Exchange Rate was established, linked to the SDR in combination with a "basket of currencies".
	• More exchange controls were eased. Traders in commodities futures were allowed to maintain foreign currency accounts in Malaysia.
1981	• Commercial banks were ordered to stop lending to Malaysian companies for investment abroad, especially in property and equity shares.
1982	• Foreign exchange controls were loosened. Banks were allowed to lend foreign currency to residents and borrowing funds from abroad.
	• Commercial banks were discouraged from using funds mobilized within Malaysia to finance investment abroad and that such funds should be used to finance the expansion of productive capacity in Malaysia.